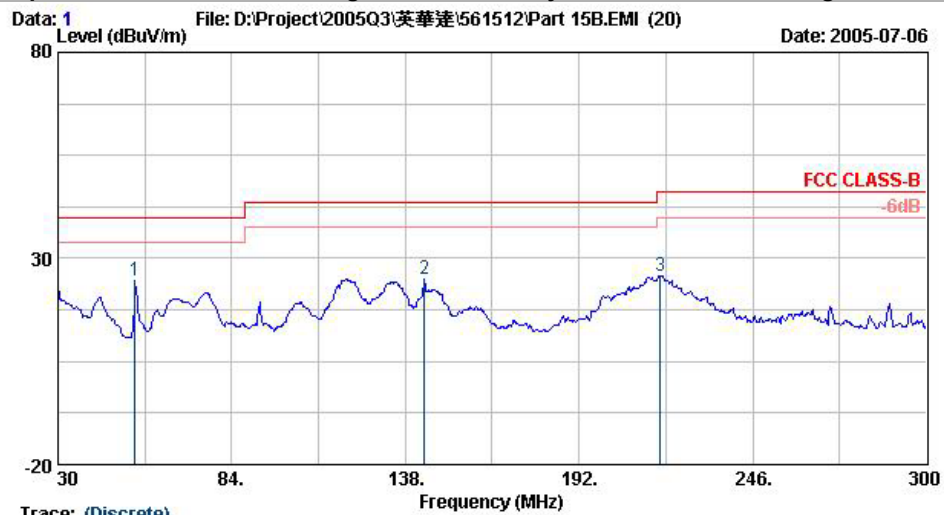


## 6.4 Test Result of Radiated Emission

### 6.4.1 Test Mode: Mode 1

- Test Distance: 3m
- Temperature: 29°C
- Relative Humidity: 60 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

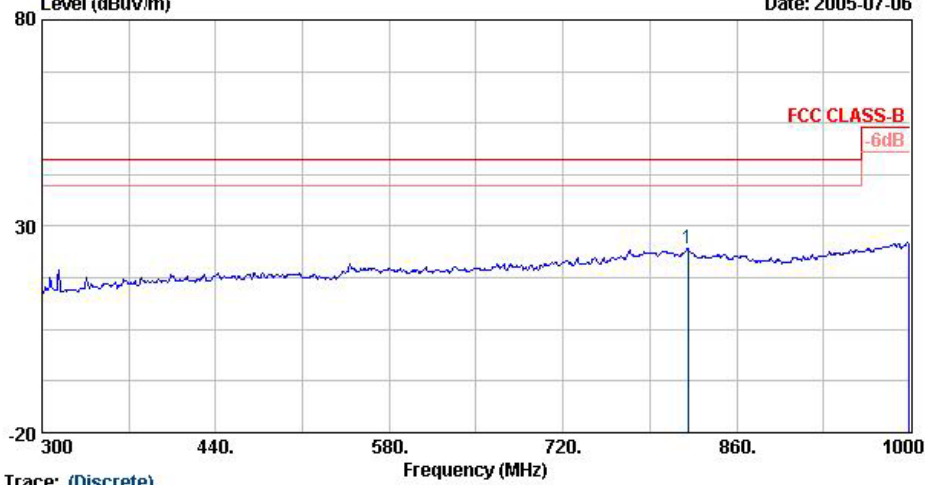
**The test that passed at the minimum margin was marked by a frame in the following data**



Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 HORIZONTAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idle+MPEG4

	Freq	Level	Over Limit	Limit Line	ReadAntenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 @	54.03	24.77	-15.23	40.00	46.69	8.53	31.44	0.99	400	0 Peak
2 @	143.94	25.02	-18.48	43.50	44.75	10.24	31.50	1.53	400	0 Peak
3 @	217.38	25.75	-20.25	46.00	45.36	9.56	31.26	2.09	400	0 Peak

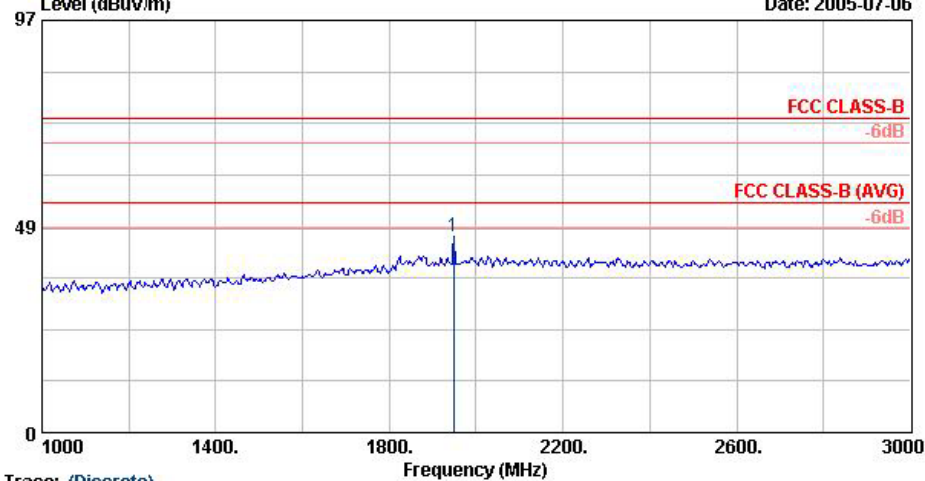
Data: 2 File: D:\Project\2005Q3\英華達\561512\Part 15B.EMI (20) Date: 2005-07-06



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 HORIZONTAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idle+MPEG4

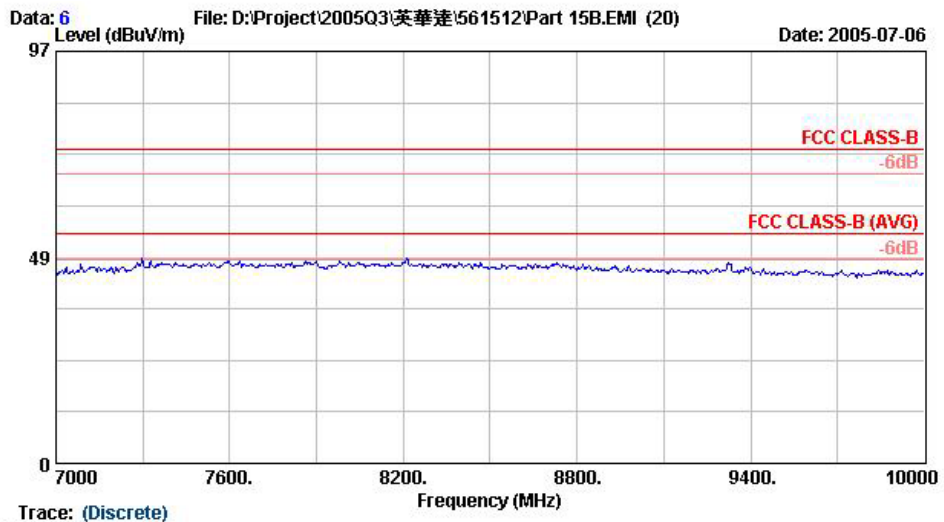
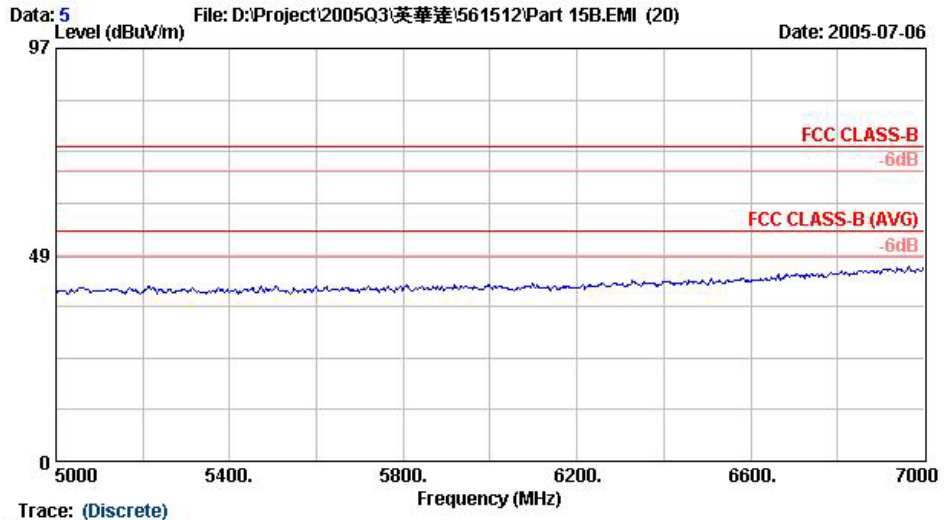
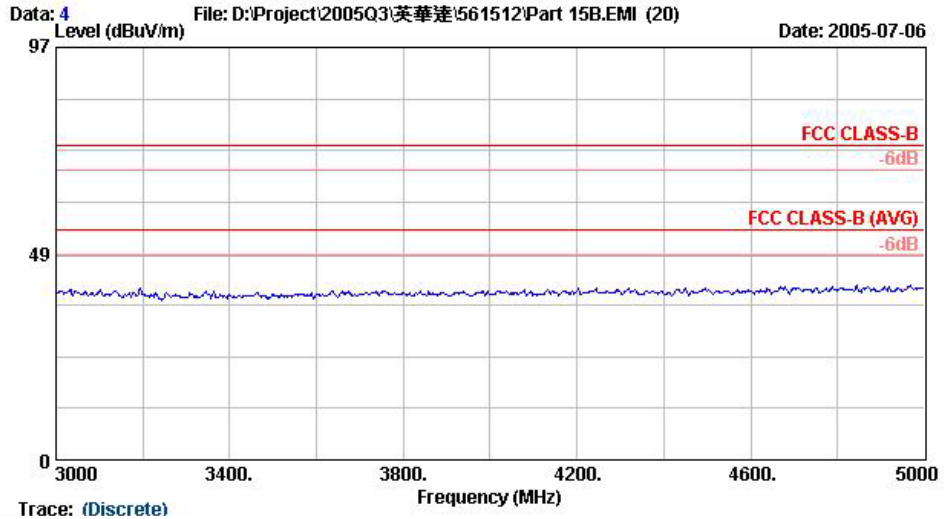
	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	820.80	24.78	-21.22	46.00	28.62	21.50	30.31	4.96	100	0 Peak

Data: 3 File: D:\Project\2005Q3\英華達\561512\Part 15B.EMI (20) Date: 2005-07-06

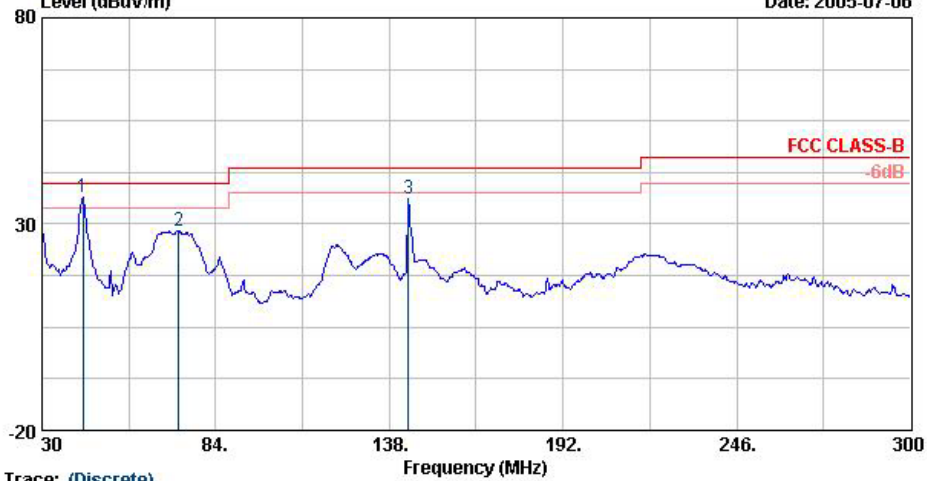


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m HF-ANT-071025-940201 HORIZONTAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idle+MPEG4

	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	1948.00	46.32	-27.68	74.00	51.18	30.37	35.23	0.00	200	1 Peak



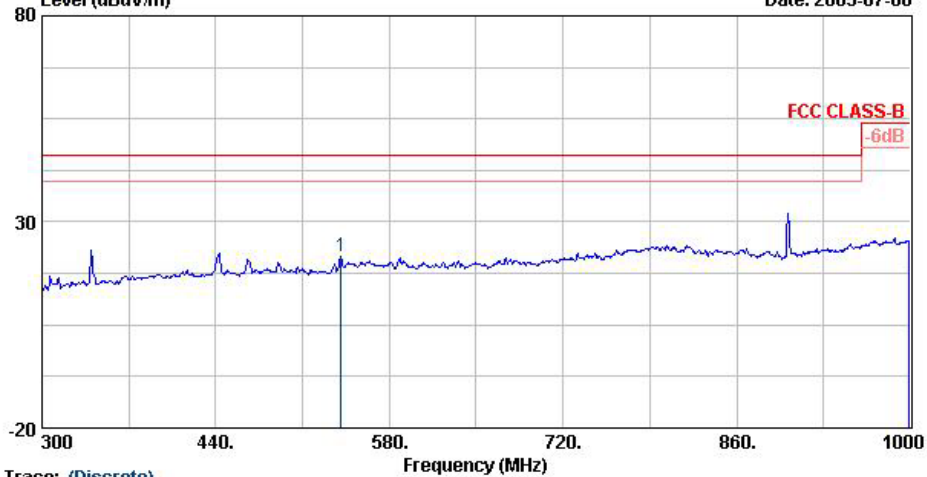
Data: 7 File: D:\Project\2005Q3\英華達\561512\Part 15B.EMI (20) Date: 2005-07-06



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 VERTICAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Modal : FC561512  
 Memo : PCS1900 Idle+MPEG4

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Preamp Factor	Cable Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 @	42.69	36.39	-3.61	40.00	54.30	13.19	31.67	0.57	400	0 Peak
2 @	72.39	28.46	-11.54	40.00	52.41	6.48	31.62	1.19	400	0 Peak
3 @	143.94	36.13	-7.37	43.50	55.86	10.24	31.50	1.53	400	0 Peak

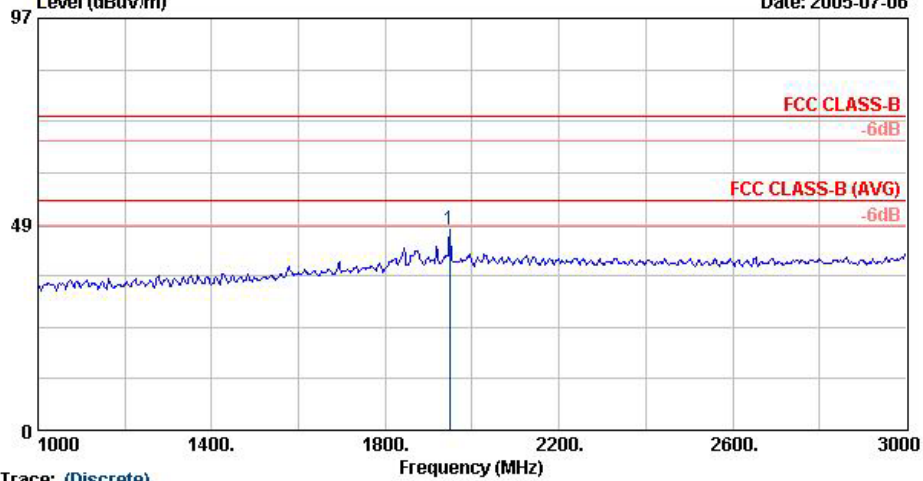
Data: 8 File: D:\Project\2005Q3\英華達\561512\Part 15B.EMI (20) Date: 2005-07-06



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 VERTICAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Modal : FC561512  
 Memo : PCS1900 Idle+MPEG4

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Preamp Factor	Cable Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 @	540.80	21.58	-24.42	46.00	30.92	16.81	29.92	3.77	400	0 Peak

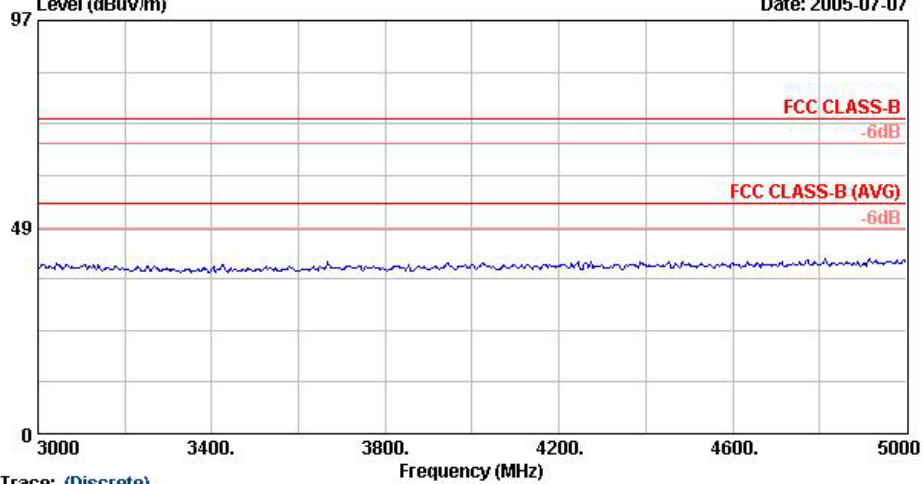
Data: 9 File: D:\Project\2005Q3\英華達\561512\Part 15B.EMI (20) Date: 2005-07-06

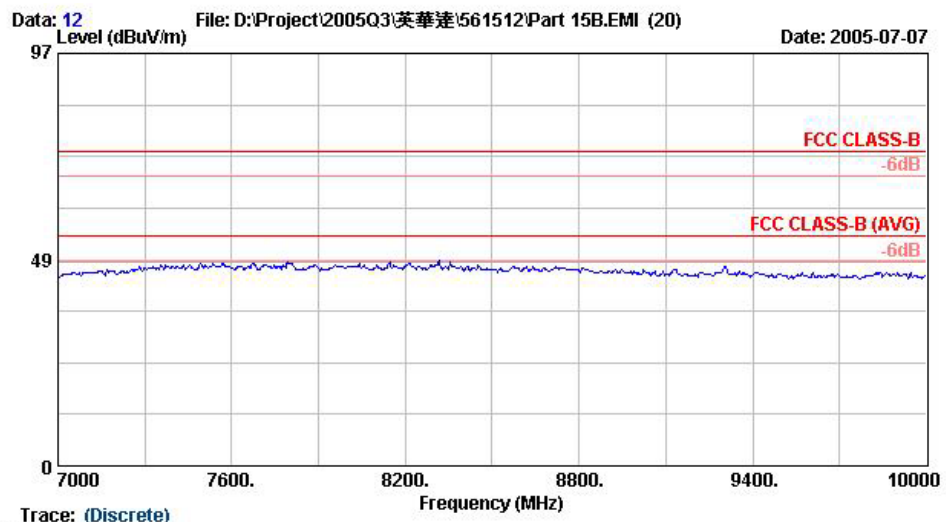
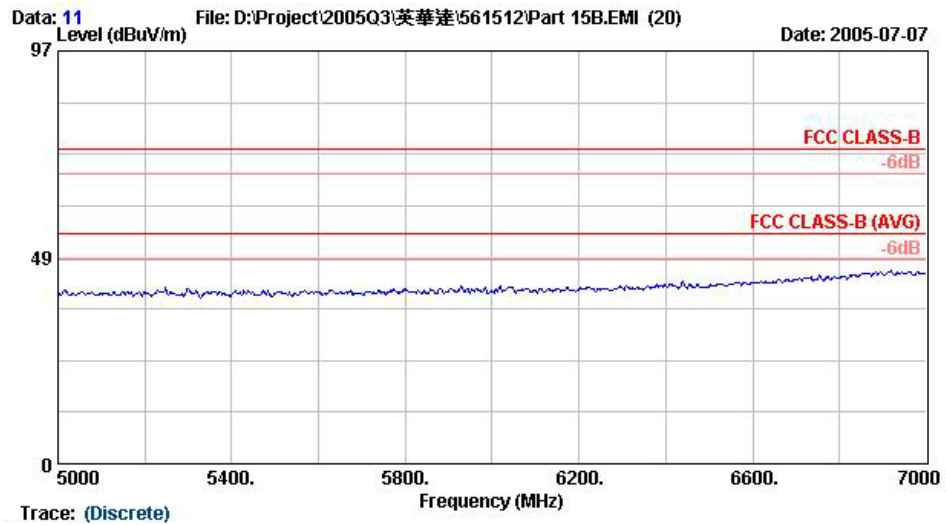


Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m HF-ANT-071025-940201 VERTICAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idle+MPEG4

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Preamp Factor	Cable Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 @	1948.00	47.06	-26.94	74.00	51.92	30.37	35.23	0.00	200	1 Peak

Data: 10 File: D:\Project\2005Q3\英華達\561512\Part 15B.EMI (20) Date: 2005-07-07





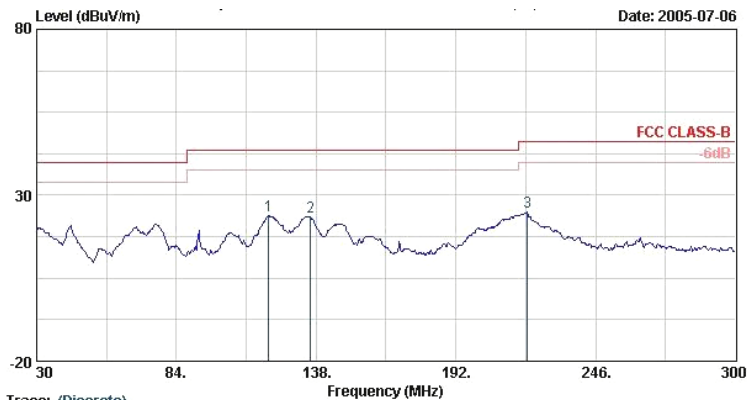
Remark: The spurious emission above 10GHz is too low to be taken.

Test Engineer : Andy  
Andy

6.4.2 Test Mode: Mode 2

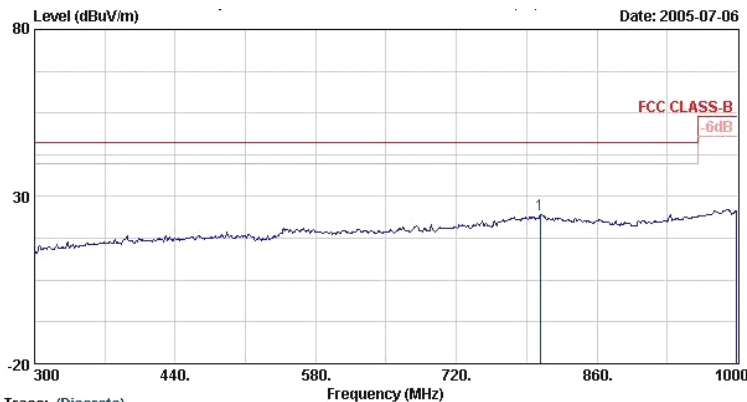
- Test Distance: 3m
- Temperature: 29°C
- Relative Humidity: 60 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

■ The test that passed at the minimum margin was marked by a frame in the following data



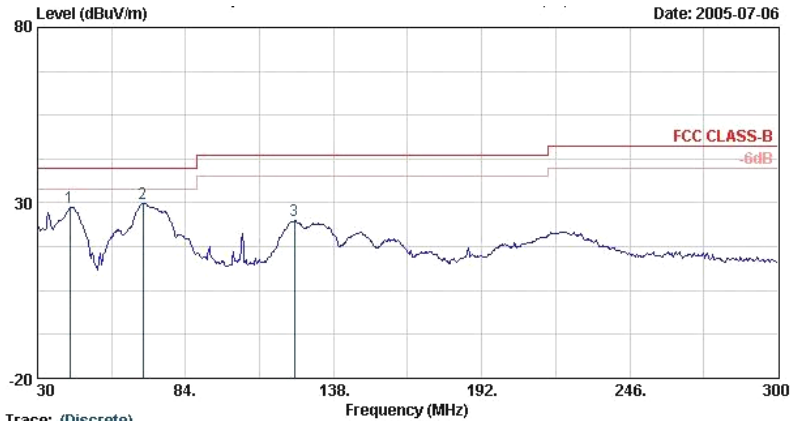
Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 HORIZONTAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idle+Camera+Charger+Earphone

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Factor	Loss	Pos	Pos	Remark
					dBuV	dB/m	dB	dB	cm	deg	
1 @	119.64	23.75	-19.75	43.50	41.12	12.72	31.55	1.47	100	0	Peak
2 @	135.84	23.55	-19.95	43.50	42.30	11.26	31.56	1.54	100	0	Peak
3 @	219.54	24.88	-21.12	46.00	44.47	9.52	31.23	2.11	100	0	Peak



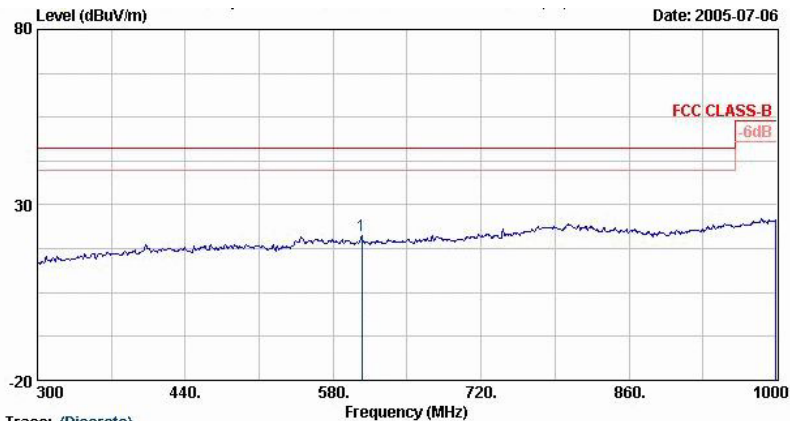
Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 HORIZONTAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idle+Camera+Charger+Earphone

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Factor	Loss	Pos	Pos	Remark
					dBuV	dB/m	dB	dB	cm	deg	
1 @	803.30	24.75	-21.25	46.00	28.26	21.84	30.26	4.91	400	0	Peak



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 VERTICAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idle+Camera+Charger+Earphone

	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 @	41.88	28.71	-11.29	40.00	46.06	13.74	31.69	0.60	400	0 Peak
2 @	68.34	29.90	-10.10	40.00	53.99	6.29	31.37	1.19	400	0 Peak
3 @	123.69	24.84	-18.66	43.50	42.72	12.14	31.57	1.55	400	0 Peak



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 VERTICAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idle+Camera+Charger+Earphone

	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 @	607.30	21.36	-24.64	46.00	29.97	18.01	30.78	4.16	100	0 Peak

Remark: The spurious emission above 1GHz is too low to be taken.

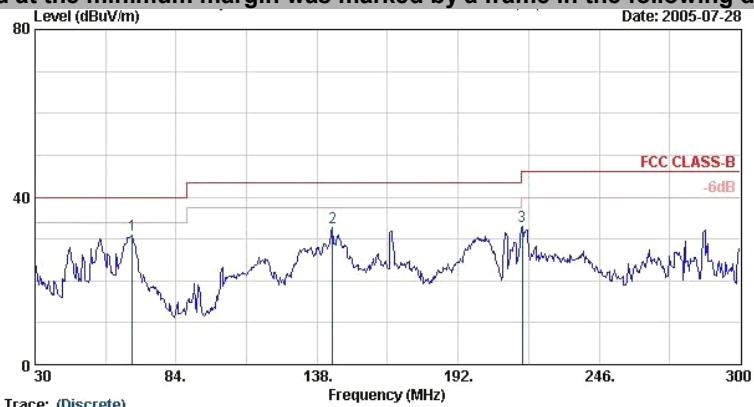
Test Engineer : Andy  
 Andy



6.4.3 Test Mode: Mode 3

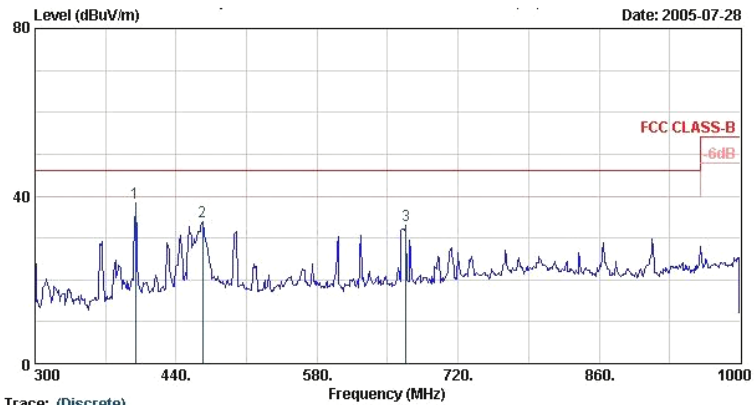
- Test Distance: 3m
- Temperature: 29°C
- Relative Humidity: 60 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

**The test that passed at the minimum margin was marked by a frame in the following data**



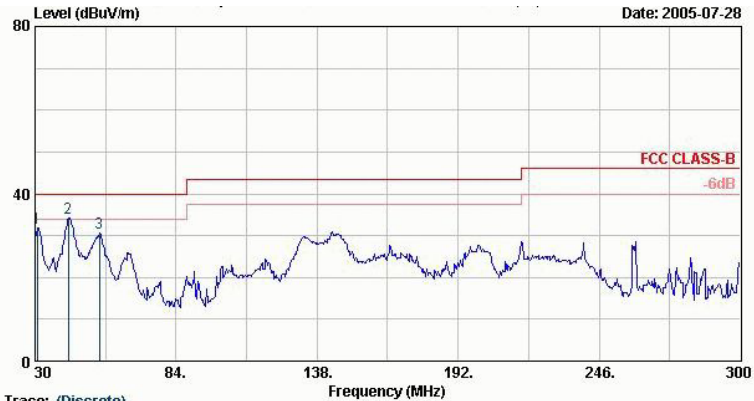
Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 HORIZONTAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idl Mode+USB Link

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	Remark
1 @	67.26	30.95	-9.05	40.00	54.96	6.35	31.54	1.18	400	0	Peak
2 @	143.94	32.71	-10.79	43.50	52.43	10.24	31.50	1.53	400	0	Peak
3 @	216.57	33.05	-12.95	46.00	52.65	9.58	31.28	2.09	400	0	Peak



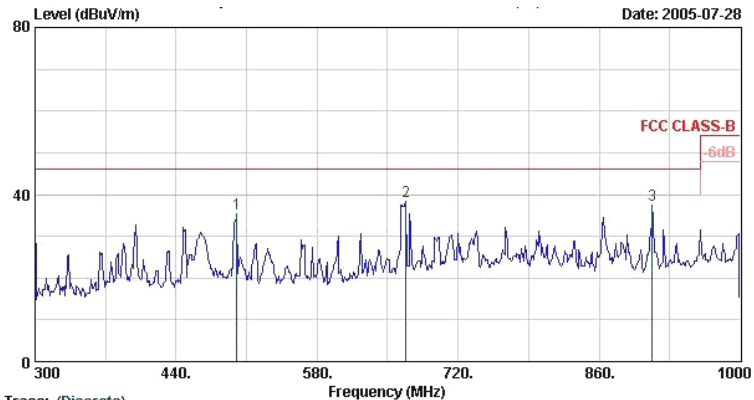
Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 HORIZONTAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idl Mode+USB Link

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	Remark
1 @	399.40	38.39	-7.61	46.00	50.33	15.87	30.79	2.98	100	0	Peak
2 @	466.60	33.90	-12.10	46.00	44.69	16.69	30.83	3.35	100	0	Peak
3 @	668.20	32.89	-13.11	46.00	40.51	18.69	30.64	4.34	100	0	Peak



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 VERTICAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idl Mode+USB Link

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	
	MHz	dBuV/m	Limit	dBuV/m	Level	Factor	Factor	Loss	Pos	Pos	Remark
			dB		dBuV	dB/m	dB	dB	cm	deg	
1 @	30.81	31.86	-8.14	40.00	44.09	18.40	31.52	0.89	400	0	Peak
2 @	42.69	34.19	-5.81	40.00	52.09	13.19	31.67	0.57	400	0	Peak
3 @	54.57	30.67	-9.33	40.00	52.59	8.53	31.44	0.99	400	0	Peak



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI-LOG-2004-1122 VERTICAL  
 EUT : Tri-Band GSM Mobile Phone(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FC561512  
 Memo : PCS1900 Idl Mode+USB Link

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	
	MHz	dBuV/m	Limit	dBuV/m	Level	Factor	Factor	Loss	Pos	Pos	Remark
			dB		dBuV	dB/m	dB	dB	cm	deg	
1 @	500.20	35.28	-10.72	46.00	45.26	17.10	30.52	3.44	100	0	Peak
2 @	668.20	38.30	-7.70	46.00	45.91	18.69	30.64	4.34	100	0	Peak
3 @	912.50	37.53	-8.47	46.00	41.82	20.32	30.37	5.77	100	0	Peak

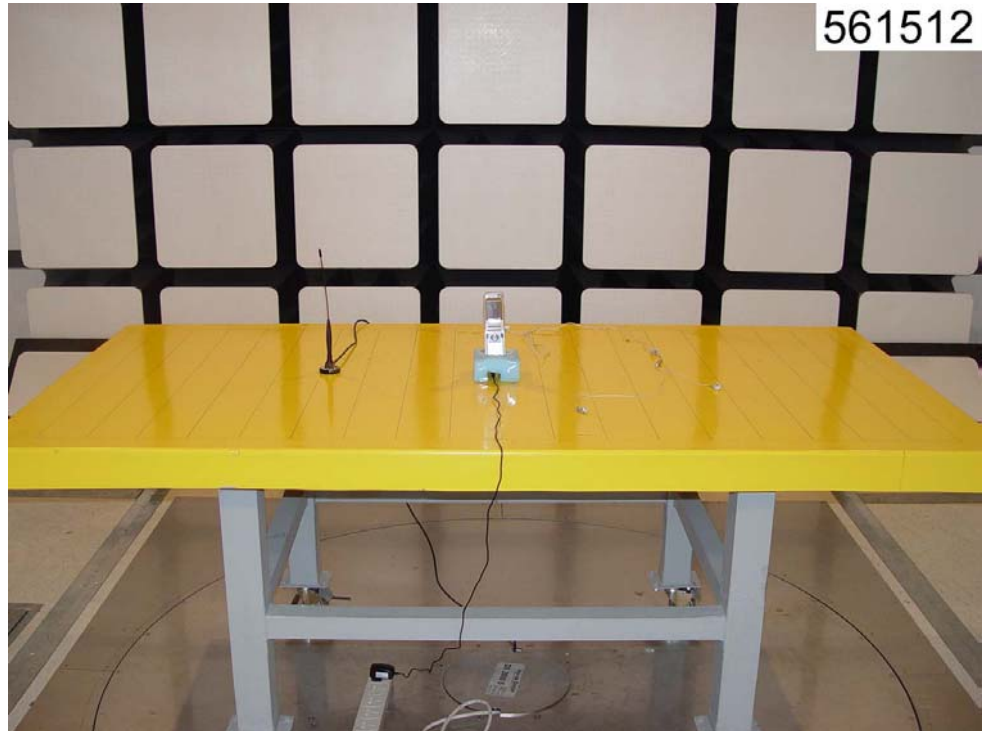
Remark: The spurious emission above 1GHz is too low to be taken.

Test Engineer : Andy  
 Andy

## 6.5 Photographs of Radiated Emission Test Configuration

Mode 1~2

FRONT VIEW

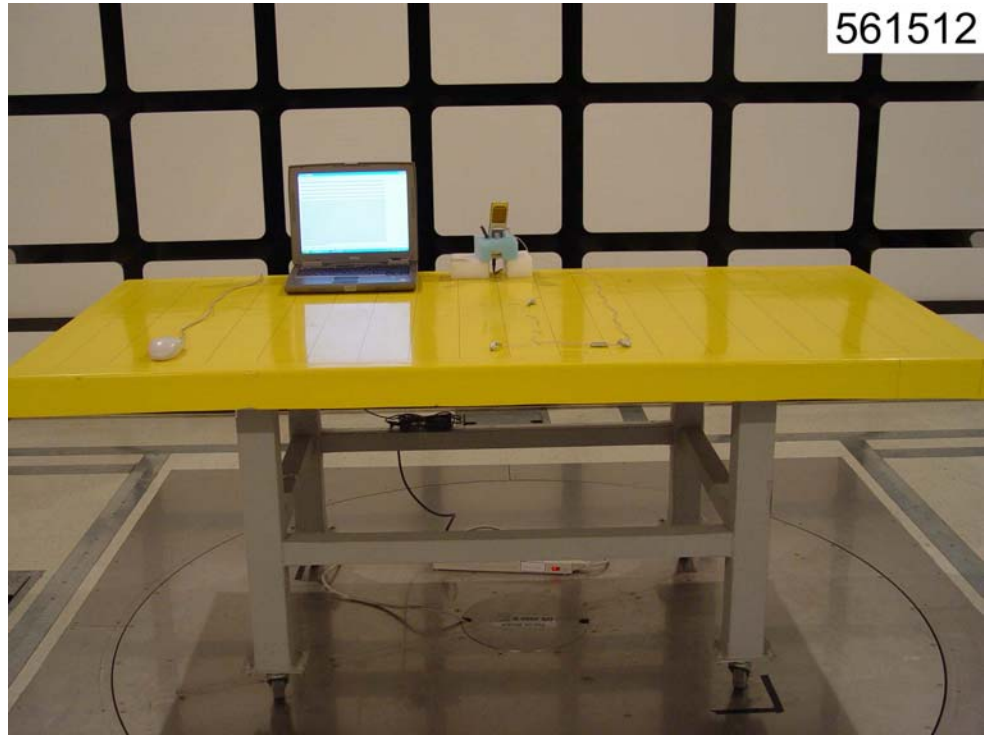


REAR VIEW

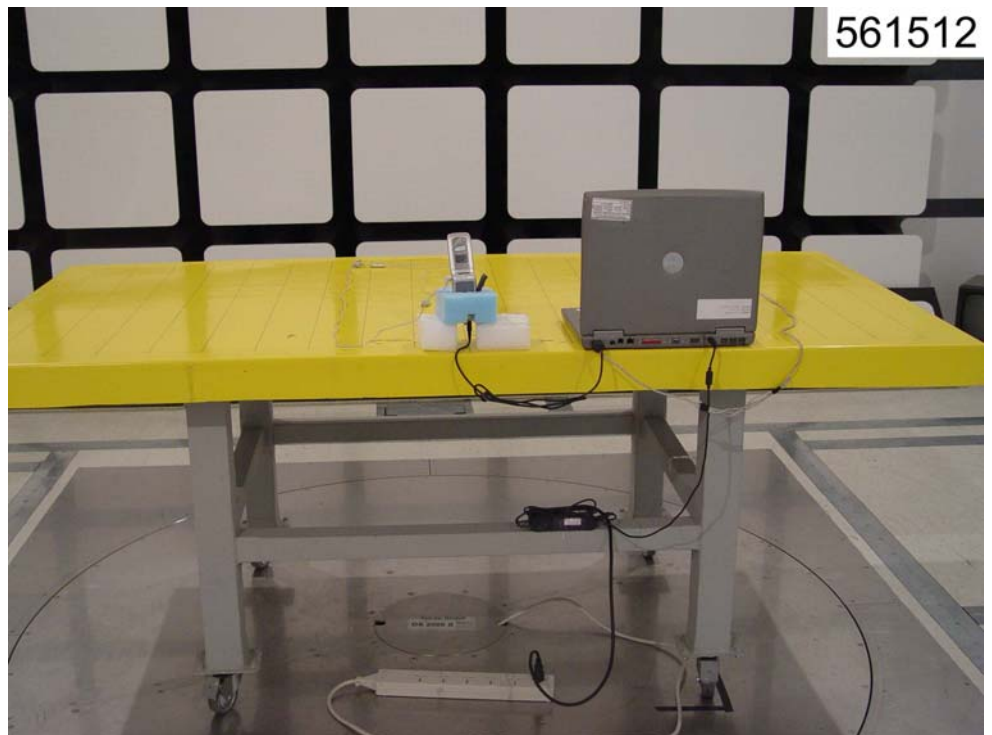


Mode 3

FRONT VIEW



REAR VIEW



## 7. List of Measuring Equipment Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9kHz – 2.75GHz	Jul. 20, 2005	Jul. 20, 2006	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Apr. 26, 2005	Apr. 26, 2006	Conduction (CO01-HY)
LISN (Support Unit)	PIC	NNB-2/16Z	2001/008	9kHz – 30MHz	May 06, 2005	May 06, 2006	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 23, 2004	Dec. 23, 2006	Conduction (CO01-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Antenna Mast	INN-CO	MM3000	114/8000604/L	1m~4m	NCR	N/A	Radiation (03CH06-HY)
Bilog Antenna	Schaffner	CBL6112B	2885	30MHz~2GHz	Nov. 21, 2004	Nov. 20, 2005	Radiation (03CH06-HY)
Controller	INN-CO	CO2000	114/8000604/L	N/A	NCR	N/A	Radiation (03CH06-HY)
Digital Radio Communication	R&S	CMD55	832796/0061	RF Link	Feb. 18, 2004	Feb. 17, 2006	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Com-Power	AH118	071025	1G~18G	Feb. 01, 2005	Jan. 31, 2006	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESCS30	100356	9KHz~2.75GHz	Jun. 28, 2005	Jun. 27, 2006	Radiation (03CH06-HY)
PreAmplifier	Agilent	8449B	3008A01917	1~26.5GHz	Mar. 29, 2005	Mar. 28, 2006	Radiation (03CH06-HY)
PreAmplifier	Com-Power	PA-103	161055	1MHz~1000MHz	Mar. 29, 2005	Mar. 28, 2006	Radiation (03CH06-HY)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	9170-249	14G~40G	Jul. 21, 2004	Jul. 20, 2006	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9KHz~26.5GHz	Jul. 25, 2005	Jul. 24, 2006	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0~360 Degree	NCR	N/A	Radiation (03CH06-HY)

## 8. Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of $x_i$		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
<b>combined standard uncertainty Uc(y)</b>	<b>1.13</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>2.26</b>		

### Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of $x_i$		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
<b>combined standard uncertainty Uc(y)</b>	<b>1.27</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>2.54</b>		

**Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)**

Contribution	Uncertainty of $x_i$		$u(x_i)$	$C_i$	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
<b>Combined standard uncertainty <math>U_c(y)</math></b>	<b>2.36</b>				
<b>Measuring uncertainty for a level of confidence of 95% <math>U = 2U_c(y)</math></b>	<b>4.72</b>				

## 9. Certificate of NVLAP Accreditation

United States Department of Commerce  
National Institute of Standards and Technology

**NVLAP**<sup>®</sup>

**Certificate of Accreditation**

ISO/IEC 17025:1999  
ISO 9002:1994

**SPORTON INTERNATIONAL, INC.**  
TAIPEI HSIEN 221  
TAIWAN

*is recognized by the National Voluntary Laboratory Accreditation Program  
for satisfactory compliance with criteria set forth in NIST Handbook 150:2001,  
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**ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS**

December 31, 2005  
*Effective through*

  
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